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Macintosh: "Automatic Transmission" Technology in a Truly Micro Computer

Before the 1930s, driving an automobile involved learning transmission shift patterns and synchronizing those patterns with the clutch pedal. That unavoidable combination of coordination and expertise kept a number of people from using the automobile. But in the late 1930s, automobile manufacturers introduced the automatic transmission—a feature that put more people behind the wheel.

Personal computers have followed a similar course. From the Apple II® through the IBM® PC, personal computers have forced people to learn unfamiliar ways of doing familiar things.

Users have had to learn about operating systems, study programming languages, decipher cryptic messages, and perform tasks in ways very different from the manual tasks the application software was intended to improve. Learning to use these personal computers required a large investment of the individual's time.

Most people wish the computer would respond in ways that are more familiar and consistent, regardless of what the computer

does. In short, they're awaiting the computer equivalent of the automatic transmission.

Evolution of the Macintosh

The Xerox® 8010 Workstation (Star) was the first computer to embody features that attempted to make computers easy to use and understand. The Star offered a powerful "user interface" that simplified the system's operation.

Symbols and graphics, rather than coded messages, represented the computer's different resources. And the Star used pointing technology—the "mouse"—to provide access to these resources. The Star made great strides toward enabling people to learn, use, and understand computers. But its dependence on a large network made Star impractical for small installations.

In January, 1983, Apple Computer introduced the Lisa™, a personal computer that improved the concepts used in Star and increased its simplicity and usefulness. Moreover, Lisa could be used as a stand-alone workstation, so offices could start with one and add others as needed.

Now Apple has introduced the Macintosh™ computer, which takes
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SeaCas and the Macintosh: An Auditor Friendly Combination

By Richard Webb and Michael MacDonald

In October, 1982, Peat Marwick introduced SeaCas (Systems Evaluation Approach, Computerized Audit Support), a multifaceted tool designed to automate nonjudgmental, mechanical audit tasks.

For many years, Peat Marwick's System 2190 software, designed to audit computerized records, has provided a tool our audit professionals use with a client's mainframe computer, allowing them to extract and manipulate information as needed for audit purposes. In short, System 2190 effectively audits automation.

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Macintosh

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the technology even further and incorporates it into a system that is competitive in price and size with systems using older technologies.

"We believe that Lisa technology represents the future direction of all personal computers," said Steven P. Jobs, Chairman of the Board of Apple. "Macintosh makes this technology available for the first time to a broad audience—at a price and size unavailable from any other manufacturer.

"By virtue of the large amount of software written for them, the Apple II and IBM PC became the personal computer industry's first two standards. We expect Macintosh to become the third industry standard."

It's designed for professionals, managers, and students—those who transform information and ideas into reports, plans, budgets, and memos. Not only will Macintosh improve their productivity and the quality of their work, but it will do so without their having to learn unfamiliar skills.

How It Works

Familiarity and consistency are key features of the Macintosh. It provides methods of performing tasks that the user already knows, and approaches these tasks in the same manner, regardless of what they are.

Macintosh uses its built-in user interface software and high-resolution display to simulate the actual desktop



working environment—complete with built-in notepads, file folders, a calculator, and other office tools.

The Macintosh user works with graphic representations—"icons"—of these familiar office objects that are displayed on the Macintosh screen. The icons also represent tasks—writing, moving documents, storing documents (disk drive), or throwing them away (waste basket). Using the mouse, the small, hand-held device that controls the cursor on the screen, the user points to and selects the object and the task.

Each application has a menu bar appearing at the top of the display screen. The menu bar informs the user of the various operations, or tools, available for that particular application. Once the user selects an application he can perform specific tasks in that application by selecting from the options that appear on the pull down menu. For example, before printing a document, a user can change such features as font style and size, margin justification, and line spacing.

Macintosh "windows"—display screens within the larger screen—can appear on the desktop to display information. Using several of the Macintosh windows, a user can view

the contents of several files at once because any number of windows can be displayed on the Macintosh desk at the same time.

Information from one window, or application, can be moved to another. This "cut and paste" feature is useful for preparing reports that require both text and graphic data, each of which may have been prepared originally at another time in another application.

All of these features make Macintosh easy to learn. Apple market research has shown that personal computers based on existing technologies require 20 to 40 hours to master. In contrast, Macintosh can be learned in a fraction of that time—typically a few hours.

Apple has designed the Macintosh to fit easily into its user's work routine. You can use the Macintosh as an electronic notepad, for example, to prepare letters, memos, or other documents. You can also use it to perform financial analysis on department budgets, draw graphic presentations, and prepare working visuals for overhead transparencies.

A Macintosh can then file those documents so they can be retrieved and reworked as required. Moreover, Macintosh quickly combines text and graphic information into a single document.

"Macintosh easily fits on a desk, both in terms of its style of operation and its physical design," Jobs states. "It takes up about the same amount of desk space as a piece of paper. With Macintosh, the computer is an aid to spontaneity and originality, not an obstacle. It allows ideas and relationships to be viewed in new ways. Macintosh enhances not just productivity, but also creativity."

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An Apology:

An article which appeared in Vol. 2 No. 1 of *Professionally Speaking* entitled "Is Your Programmer an Employee or Independent Contractor" should have been credited as copyrighted material from an article which appeared in the *Computer Law and Tax Report* published by Warren, Gorham & Lamont, Inc., 210 South St., Boston, MA. 02111 and written by Robert Bigelow. We apologize for the omission.

Macintosh: A Closer Look

At the heart of Macintosh is a 32-bit microprocessor, the Motorola MC68000. The microprocessor's 32-bit architecture and speed support the graphics-based user interface. Macintosh uses a 9-inch, high-resolution (512 by 342 pixels) bit-mapped display.

Application software and information are stored via the Macintosh computer's built-in 3 1/2-inch floppy disk drive. The disk drive can store up to 400 kilobytes of data, or about 100 double-spaced typewritten pages of information on each microfloppy disk. These 3 1/2-inch floppy disks are protected by a hard plastic case, which means they're small and sturdy enough to fit in a shirt pocket. Additional storage is available with an optional external floppy disk drive.

The Macintosh Toolbox, the software that implements its user interface, has more than 480 separate software routines and is stored in 64 kilobytes of read-only memory built into every Macintosh computer. System main memory contains 128 kilobytes—enough room for more than 131,000 characters.

The Finder is the application that allows users to organize their data, documents, and tasks just as the user would on a desk in the office. Icons appear as documents, folders, or disks—with their titles appearing next to them.

To gain access to a document, users need only select the appropriate icon and "open" it. When a document is saved, it reverts back to an icon and is stored in its original location. Users may therefore organize files in any way they choose.

Macintosh also supports Apple's interconnect strategy, AppleBus. A small, local, equipment sharing bus (a circuit over which data or power is transmitted), AppleBus lets Macintosh and Lisa users share such peripherals as printers and disk drives via standard twisted-pair cable.

Macintosh's data communications capabilities give its users low-cost access to information stored in mainframe computer databases. Macintosh currently can emulate a variety of popular terminals, including the VT100™, VT52™, and TTY terminals for non-IBM mainframe communications, and the IBM 3278 terminal—via the AppleLine coax adaptor unit—for

IBM mainframe communications.

Macintosh was designed to conform easily to local and international requirements. For example, the Macintosh user interface can display the date in a month-day-year format for the United States or it can be changed to day-month-year format for European applications.

Additionally, all connectors on the Macintosh cabinet are identified with international symbols rather than words. This simplifies the attachment of printers or additional mass storage devices, and eliminates the need for translation—regardless of where the Macintosh is used.

Unmatched Software

Through a program begun more than two years ago, Apple expects that its developer program will make at least 500 software packages available for Macintosh by the end of the year. Apple has supported the work of independent software vendors to develop these Macintosh programs.

Lotus Development Corporation is rewriting its popular Lotus®1-2-3 for Macintosh, and Microsoft executives say they expect nearly 50 percent of their company's revenues in 1984 to come from Macintosh software. In fact, more than 100 major software and peripheral vendors are developing packages for Macintosh, including Software Publishing Co., Continental Software, Ashton-Tate, and Sorcim Corporation.

Apple is currently providing two of its own application programs for the Macintosh: MacWrite™ and MacPaint™. MacWrite is a versatile word processing program that features multiple fonts and type sizes, search-and-replace functions, and the ability to "cut" text and pictures from other programs and "paste" them into memos or reports.

MacPaint is a powerful illustration graphics program. Users can choose from an array of tools, such as brushes, pencils, and erasers, and a large selection of textures and shapes, to create an endless variety of free-form and structured images.

Microsoft's Multiplan™ spreadsheet program is immediately available as well. Designed to take full advantage of Macintosh's built-in Lisa technology, Multiplan allows you to access all of Macintosh's built-in desk accessories. Should you need to make a few quick computations

before entering new spreadsheet figures, for example, you can use the built-in desk calculator.

Microsoft's Chairman of the Board and CEO affirmed that "to create a new standard takes something that's not just a little bit different. It takes something that's really new, and captures people's imaginations. Macintosh meets that standard."

The Macintosh is, in effect, a desktop appliance offering its users increased productivity with a simple, straightforward user interface, much like a telephone or calculator—or a car with automatic transmission.

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VT100 and VT52 are trademarks of Digital Equipment Corporation.

Xerox is a registered trademark of Xerox Corporation.

Lotus 1-2-3 is a registered trademark of Lotus Development Corporation.



Using Lisa as a Project Planning and Management Tool

By R.W. Botterill

During the 1980s, a revolution has been occurring in the information processing industry. Although the most visible part of this revolution has been in the area of microcomputers, it has also been witnessed in the more traditional areas of data processing.

This has been especially true in the financial industry. Deregulation, increased competition, and the resulting abundance of new products has made it necessary to have an efficient and effective way of managing the technology that plays an integral part in delivering the ever increasing amount of information that is both available and being requested today.

If this dynamically changing environment is linked to the decreasing cost of hardware, and the increasing costs of mainframe software and human resources, the importance of an effective project planning and management tool becomes evident.

At U.S. Bancorp, we have an average-sized Information Processing Division (IPD), composed of eight departments with a total of

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Using Lisa

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approximately 325 people.

The Systems Development Department contains half of these people, and has responsibility for 82 application systems.

In April, 1983, the Office Information Systems Department received the first Apple Lisa to evaluate its potential use within the corporation. After the initial excitement about the new technology had subsided, staff from five of the departments within the IPD began scheduling time on Lisa, primarily to use its powerful project planning software. It was not long before scheduling time on Lisa required signing up well in advance, and in July a second Lisa was obtained for the exclusive use of the Systems Development Department (SDD).

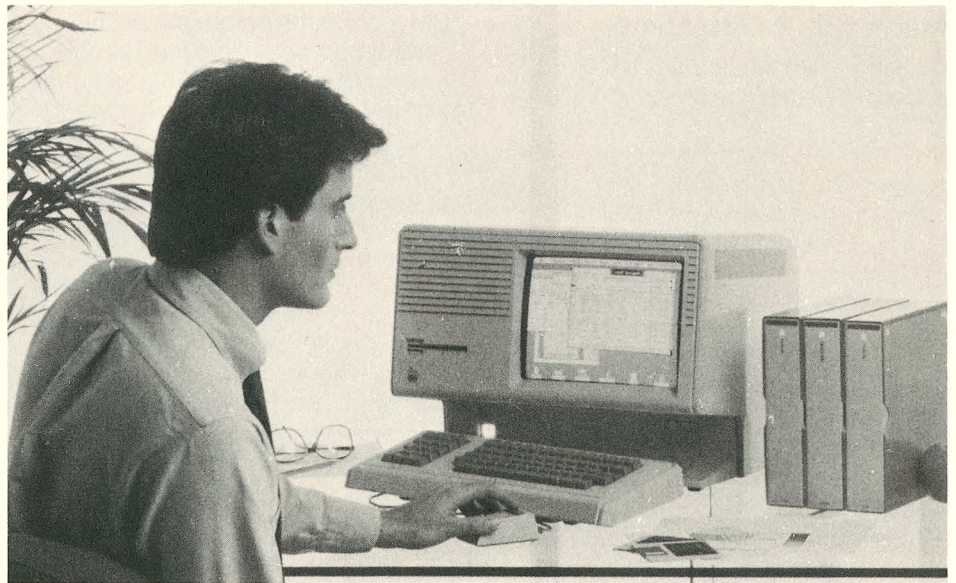
LisaProject

Today all of the application systems that are the responsibility of the SDD have been documented using LisaProject. Initially they were documented at the project level as opposed to the task level. Today, however, over 33 percent of those projects have been entered at the detail level, with the remaining projects scheduled to be documented at this level before the end of the year.

LisaProject is a project scheduling program available on Lisa. It enables the user to break down visually a project into the individual tasks it comprises. The program then automatically records start and finish dates for each task, determines the critical path flowing through the project, and develops a visual representation of each employee's responsibilities and slack time. LisaProject allows managers to play "What if?" with time and resources to plan more effectively and complete projects of any kind.

It has become a standard that each of the monthly progress reports that are produced by the five Application Group Managers in the SDD be accompanied by a LisaProject chart, and any new project that is being proposed must first be documented using LisaProject. Use of the tool forces the manager responsible for the project to think through all of the project dependencies, and enables easy identification of those areas where staff are being either overloaded, or under-utilized.

This has resulted in a graphic and, therefore, effective means by which



the impact of any project can be communicated to the appropriate decision makers. The impact of this graphic communication cannot be overstated, especially when all aspects of the project are entered, whether related to the IPD responsibilities or the responsibilities of other areas involved with the project. The critical path can easily be identified and, if not acceptable, each aspect of the project can be analyzed, and the priorities can be re-evaluated and changed.

LisaList

Recently, one manager has begun to use LisaList in conjunction with LisaProject to manage the personnel that report to him. He has developed a "project inventory" or "database" that lists all projects that are either pending, in progress, or completed.

The database identifies the project; work effort related to the project; project leader; a description of the benefits; any quantified benefits; requestor; priority; area responsible; status; estimated completion date; actual completion date; number of staff; equipment cost to date; equipment cost remaining; staff cost to date; staff cost remaining; total cost to date; and total cost remaining.

This enables him to selectively look at any subset of the above information, and to closely monitor all costs and time frames related to a project.

Additional Lisa Programs

LisaGraph has been widely used by SDD to generate statistical graphs for presentation to various levels of management, and LisaDraw has been

used to generate graphics varying from location planning to operational workflow diagrams. (All of the output from Lisa can be used to produce some very effective overhead foils).

Although the prime user of Lisa has been the SDD, other areas of the IPD have used Lisa for project planning, ranging from the recent installation of a new mainframe to the Corporate Information Network Architecture Plan.

The benefits to be derived from Lisa as a project planning and management tool can be realized at many levels. It can be used by project managers to show that additional staffing is required on a project if the deadlines are to be met. The same charts can be used by senior management to reprioritize projects to enable their completion by utilizing existing staffing levels. Critical paths can easily be identified and, if necessary, adjusted to enable more timely completion of projects.

There is an important benefit to having all projects entered on Lisa. As priorities change, new requests are made, and additional tasks are added to the project, the changes can be made quickly and easily. This provides the capability, in effect, to play "what-if?" games with the projects. This enables quick analysis of the impact of any changes from both a scheduling and a resource perspective, and from this analysis, informed decisions can be made regarding the actions that need to be taken.

We anticipate the use of Lisa by the SDD will help enable us to avoid hiring three people over the next year. This means Lisa will have paid for herself 10 times.

Suggested Software Improvements

Like any software, the Lisa software could be improved. We would like to see the ability to allocate resources by time spent on a given task. It is possible to achieve this by appending a unique number to each of the resources identified on the chart that have multiple tasks assigned to them. It would be more effective in our environment, however, if resources could have a percentage indicating the amount of time that they will be allocating to any given task.

Another enhancement would be to have each task on the chart be linked to a record in LisaList that could contain narrative describing the task in more detail, along with the other information that is necessary to monitor a computer-related project.

A way of combining and consolidating charts—at least the bar charts—would be helpful also to show consolidated work efforts. If each task on a high-level chart could be pointed to a more detailed level (and vice versa), it would improve the effectiveness of the tool.

Another addition would be a way of signifying vacation time by resource, perhaps under the calendar option of LisaProject. This could function in much the same way as the existing public holiday feature, except that it would deal with blocks of time.

Taking these minor criticisms aside, Lisa has proven to be a valuable addition to the Systems Development Department, and provides many functions that help in the management and planning of such a department.

Editor's Note: Many of these enhancements are currently being completed and will be available this spring. An additional enhancement will include the ability to break a task down by hours as well as days, and to do job-costing calculations.

About the author:

Richard Botterill currently manages the Office Information Systems Department of U.S. Bancorp, a \$6 billion financial institution in the Pacific northwest. Its major subsidiary is U.S. National Bank of Oregon. He has worked for the company for five years, prior to which he worked as a consultant in London and New York. The Office Information Systems Department is part of the Information Processing Division, and has responsibility for all office automation at U.S. Bancorp, including microcomputers, text processors, graphics, and modeling.



Apple at Security Life of Denver

By David L. Hatch

Security Life has grown from a small operation with \$500,000 in assets in 1898 to a major insurance company with over \$342 million in assets.

We're part of an international life and casualty insurance group that comprises more than 30 companies. Located in 24 countries throughout the world, these companies are joined under the banner of Nationale-Nederlanden, the largest insurance company in Holland. We enjoy an A. M. Best Company rating of A+. (Best is considered the "Bible" in the analysis of insurance companies from the standpoint of service and solvency. Of the more than 1850 life insurance companies operating in the United States and Canada, only one in eight has received the coveted A+, or "excellent," rating.)

Primarily through the use of large computer systems and advanced insurance software, Security Life has been able to keep up with its impressive growth without a corresponding increase in personnel. But our demand on these computer systems created a programming backlog conservatively estimated to be in excess of 20 person-years.

Because one of our more significant backlogs was remote on-line service to our agents, a working group was formed early in 1982 to establish a long-range plan for communicating with our agents. At that time, service to the agents consisted of a stand-alone insurance proposal system based on a minicomputer, and a policy inquiry system that would run on our large mainframe. Both systems used the minicomputer terminal, and a limited number of agents were on-line.

Since all of our agents are independent business people and not subsidized through the home office, they were required to purchase their own equipment. The terminal, printer, modem, and accessories cost about \$5,000, so there was considerable pressure for us to support one of the microcomputers. The agents felt that a micro would give them the flexibility of direct communications with our insurance-proposal and policy-inquiry systems, and still permit other applications directly associated with their private businesses.

The group established the following guidelines:

- We could provide the best support by limiting agents to only one brand of microcomputer (at least initially). It was important, therefore, that the micro have a large dealer/support network and a wide variety of software that would meet the varied personal needs of any agent's specific environment.
- We would support the agent's micro only in communications with the proposal and inquiry systems.
- The micro should be made to communicate with the asynchronous proposal system and with the bisynchronous inquiry system.

Because of these restrictions, only Apple, Commodore, IBM, and Tandy systems were evaluated. The final decision went to Apple because of its national accounts support program and the vast amount of professional software available.

In late August of 1982 we signed a national accounts agreement with Apple that allows our agents to purchase equipment directly through us and take advantage of our volume discount. We now have 30 Apple users on-line, and more coming on each week.

We use Tymnet for our remote network, and that "engine" provides the facility to direct an incoming message to the mini for the proposal system or to the mainframe for the inquiry system. A Datastream T7 is used for 3270 emulation to the mainframe.

The need for more sophisticated proposals prompted us to purchase a second proposal system that runs on one of our mainframes. Eventually, the minicomputer-based system will be phased out.

In addition to Apples in our remote network, we currently have 25 Apple /// systems and 3 Lisas within the home office. These machines have been most significant in relieving pressure from our saturated central word processing department. But they're also used to perform many tasks that we would never have been able to put onto our mainframe computer, given our applications backlog.

As an example, much of the Systems Department's project control system is being shifted from the mainframe to an Apple ///, and we're currently using a Lisa for project management systems to further off-load the mainframe and provide additional flexibility.

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Apple at Security Life

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Our Actuarial Department uses its Apple systems for initial new product evaluation and for pricing/profit studies that were previously scheduled as mainframe projects. The department's plans call for using its Lisa to control the process of obtaining approval of new products from individual states. Since each of the 50 states must give specific approval, this is a significant effort when the process is controlled manually. The actuaries are also able to use graphics more extensively now for their presentations.

Our Controller's Department uses its Apple systems for financial reporting to our Dutch parent. This was previously done by hand because, again, our applications backlog didn't allow for resources to develop the application on the mainframes. The Controller's Department is also doing 10-year projections, forecasting, expense allocations, and quarterly report summaries on its micros. Members of the department claim this has been of considerable benefit to them in managing corporate assets and planning for the future.

In short, the Apple computers have been very well received at Security Life, and users range from clerical staff to executives. (Our executive vice president of marketing uses his Apple III to track *projected* versus *actual* sales results on a weekly basis, and to prepare graphics presentations.)

Our president and other senior officers are committed to the general concept of computer literacy as a critical factor to our personal productivity in the future. They are so committed, in fact, that they have agreed to provide a three year no-interest loan to any employee who wants to purchase an Apple computer for home use. This program has been very popular, with 25 people presently participating and many others expressing high interest.

Another example of Security Life's commitment is our recent announcement regarding formation of an information center whose charter includes: assisting people in selection of microcomputers for both business and personal use, providing training for new and current users, and staffing a hotline for hardware and software questions.

What does the future hold for microcomputers at Security Life? We'll be watching with great interest the progress of Apple's new Lisa system,

since we may adopt it as the basis for our future office automation system.

More specifically, though, we are currently formulating plans to allow the Apples, as well as our ever-growing number of local 3270 terminals (150 to date), to interact with each other in our CBX-based local network for such applications as electronic mail.

We also anticipate being able to allow programmers access to our mainframe from their personal Apples. This should allow those people "on call" to solve some middle-of-the-night production problems from their homes instead of driving to the office.

In conclusion, I would say that the Security Life Systems Department—far from opposing the microcomputer onslaught—has taken the lead in embracing these devices as another tool in providing a high level of service to our users.



About the author:

David Hatch is the assistant vice president in charge of technical services at Security Life. His responsibilities include the information center, the systems programming group, computer operations, data control, and office automation planning. He has been with Security Life for 10 years and has almost 20 years of experience in data processing.

Typesetting With No Extra Steps

The Compugraphic® Personal Composition System™ puts quick, high-quality typographic communications within the reach of all businesses, large and small. Combining the power, ease of operation, and revolutionary capabilities of Lisa with Compugraphic's sophisticated typographic output, the Compugraphic Personal Composition System eliminates the extra steps involved in complicated operating procedures and extensive keyboarding.

Materials that once had to be prepared on a typewriter or word processor can now be produced in attractive, attention-getting typographic form using the Personal Composition System. This means that businesses can create attention-getting memos, letters, reports, proposals, and other documents that are more readable, credible, and memorable than the mono-spaced typewritten or word processed text that currently overwhelms today's managers.

Documents—such as graphs, flowcharts, and pie, line, and bar graphs—that could be set in type only by complex keyboard procedures can now be produced quickly, conveniently, and economically.

With the system's advanced graphics and text merging capabilities, offices can produce professional quality documents in a wide range of typesizes and sizes, and produce media such as clear film for overhead transparencies. Visual information such as charts, tables, and symbols, is easily mixed with text for more effective presentations of complex material. Consequently, your messages will be far more likely to be read, remembered, and acted upon than typewriter-style text.

Reading, analyzing, and producing documents typically takes up more than half of an executive's working hours. By combining high-quality output with Lisa's ease of use, the Compugraphic Personal Composition System has brought unprecedented benefits and significant increases in productivity to business communications.

Compugraphic and Personal Composition System are trademarks of Compugraphic Corporation.

Computers in the Brokerage Industry

By Alan C. Refkin

Increasingly, the brokerage industry is turning toward financial planning and asset management in its relationship with clients. As portfolio development and management grow more complex, personal computers are becoming more commonplace in the brokerage environment.

As an example of how computerization has enhanced portfolio and asset management, let's consider the following case history.

A client has a considerable amount of ordinary income and large capital gains from stock market advances in 1983. His goal is to reduce his tax burden to the lowest practical level, yet he's unsure whether the new alternative minimum tax would apply to his situation. Also, he'd like to know whether he should prepay his state taxes, and whether income averaging would be effective for him this year.

While these questions seem complicated, they're not uncommon. In the past, the response this client might have received from someone trying to shelter his income would have been, "I think you can use this much write-off," or "I think the new alternative minimum tax doesn't apply." But there was no practical, precise method of making these determinations.

Simply to examine these areas and their alternatives was a laborious process. Instead, we decided to use various financial and tax planning packages in order to make the most efficient use of our time. One such package is the Tax Mini-Mizer™ program from Sunrise Software. This program allows us to provide numerous alternatives in tax planning by recognizing the following:

- the effect of various types and amounts of tax shelters on an individual's income
- the effect of income averaging
- the impact of the alternative minimum tax
- the advantages and/or disadvantages of prepaying state taxes.

The major benefit of this program is that the guesswork is eliminated from financial and tax planning.

Computerization has assisted us in financial modeling, too. From Addison-Wesley we purchased a Micro-DSS™/Finance Program for this purpose.

Traditionally, financial modeling in the brokerage industry has been a fairly involved process requiring the broker to either send the data to a regional or home office, or work in conjunction with an insurance company. Either way, it was very time consuming and the client usually had a fair wait before receiving the model. In addition, if he or she made a change, requested other alternatives, or made different assumptions, the process had to be repeated.

Another disadvantage was that there was rarely any "real time" monitoring of a client's progress as it related to his or her financial planning scenario. By using Micro-DSS /F, though, we're able to formulate highly sophisticated financial models and, with very little effort, come up with various alternatives and provide "real time" monitoring of financial progress. In addition, the program allows us to convert financial data into graphic presentations for our clients. Again, the guesswork has been eliminated.

The fact that we're able to accomplish all this is due in large part to the efforts of Rainbow Computing in Northridge, California. They designed a network for us that was flexible, yet sophisticated enough to meet our special needs. Before deciding on Apple, we spent six months examining virtually every major computer system.

We presently have four Apple //e's networking off a Corvus™. In addition, we're interfacing to a letter-quality Diablo 630 printer with dual sheet feeder, and also to an Anadex 9625A dot matrix printer. This system seems to provide us with the best flexibility, both in record storage capacity and in speed of data retrieval.

We're convinced that we initially underestimated the letter-quality printer. Its speed and ease of use are increasing our client communication and quality of correspondence. In the past, client communication was a very time-consuming process. But by using WordStar®, MailMerge™, and SpellStar™, we're able to save a great deal of time while still increasing the quality and frequency of our correspondence.

The last portion of our financial and tax planning system fell into place when we purchased a Lisa. This system's chief advantage is its ability to create great amounts of individual client record data and store it in easily accessible locations. In addition,

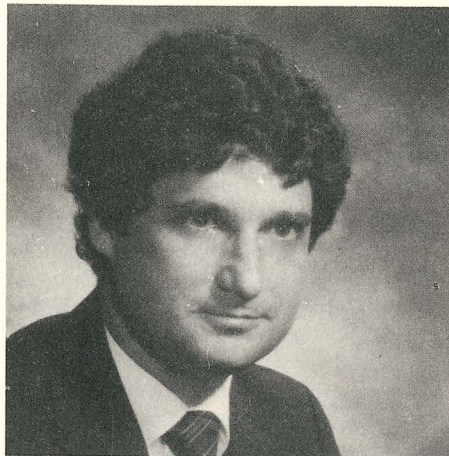
we're able to transform this data, if we desire, into graphic forms for inclusion in our portfolio presentations. All in all, it's a system we continually use for "fast" projects where some data and projections are needed quickly.

Since implementation of this system in March, 1983, our business has more than doubled. And just as important, our available time has increased.

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Tax Mini-Mizer is a trademark of Sunrise Software.

Micro-DSS/F is a trademark of Addison-Wesley Publishing Company.



About the author:

Alan C. Refkin is a Senior Vice President at the Los Angeles office of Sutro and Co., Incorporated, where he specializes in financial and tax planning for individuals and corporations.

Apples Make for Fruitful Financial Planning

By Harold F. Rahmlow and Robert T. LeClair

Few groups have attached themselves to the microcomputer revolution more enthusiastically than financial planners. Though they generally have a less technical background than scientists or engineers, financial experts have been no less quick to realize the advantages of using such equipment in their business.

And with good reason. Personal financial planning is a complex task involving a wide range of individual and economic variables. It typically requires the manipulation of large amounts of data, with frequent projec-

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tions into an uncertain future. The personal computer has provided financial planners with a powerful resource in dealing with these problems.

In addition to being complicated, financial planning is made more difficult by its nature as an ongoing process. The financial affairs of an individual or family can't be "solved" like a routine math problem. They require continuous monitoring, and must be updated to take account of changes in personal circumstances, new financial products and services, and general economic conditions. The ongoing nature of the planning process makes the personal computer an even more valuable tool.

For years insurance companies, banks, and other financial institutions have been major users of large main-frame computers. Then came large terminal networks that put some of the home office's computing resources at the disposal of field personnel throughout the nation. The latest event in this evolution of computing power is the arrival of the microcomputer.

Recently The American College, in conjunction with the Life Insurance Marketing Research Association (LIMRA), conducted a survey on computer use by insurance companies within the United States. Responses from 102 companies, including the major companies in the field, indicated that over half of them make microcomputing hardware and software available to their field forces.

In over half of these instances, the field force pays for 100 percent of the purchase or lease price. Within that group, approximately 70 percent of the companies provide some form of financial assistance, usually tied to production credits. The survey also indicated that of all the different types of hardware used, Apple computers ranked number two.

What are insurance agents and other financial planners doing with their Apples? Uses can be divided into four general areas: word processing, spreadsheet ("What if?") analysis, database management (client-file maintenance), and communications. Let's look at each of these.

Word Processing

The insurance business is a business of selling intangibles. It is a world of concepts, personal relationships, and communications. Word processing enables agents to communicate

quickly and efficiently on a personalized level with a large number of clients.

The information communicated is often highly repetitive but needs some degree of personalization. Using the Apple as a word processor enables field personnel not only to communicate with large numbers of clients, but also to customize their communications to meet the specific needs of each individual.

Spreadsheet Analysis

As consumers become more informed with respect to their financial affairs, they become ever more de-

manding. They're increasingly inclined to ask "What if?" questions related to a wide range of possible options—from the effect of a simple interest-rate change on capital for a child's education, to complex situations involving the tax consequences of various investment strategies.

Many agents and financial planners are currently using their Apples in conjunction with The American College's Money Manager VisiCalc® templates to answer just such questions. Figure 1 illustrates part of a program to calculate and project a client's net worth. The left-most column indicates growth rates associated with each financial asset or liability. Projections

Figure 1

Net Worth

FINANCIAL POSITION - CURRENT/PROJECTED:

JEFF & BARBARA SHERMAN

GROWTH FACTOR	ASSETS:						
	LIQUID ASSETS:	YEAR:	1983	(%)	1984	(%)	1985
1	CASH		3000		3000		3000
1.055	SAVINGS ACCOUNTS		5000		5275		5565
1.08	SAVINGS CERTIFICATES		20000		21600		23328
1.14	MONEY MARKET ASSETS		20000		22800		25992
1.06	LIFE INS. CASH VALUE		7500		7950		8427
1	OTHER		0		0		0
	TOTAL		55500	6.90	60625	6.77	66312
	OTHER FINANCIAL ASSETS:						
1.09	U.S. GOVT. BONDS		4000		4360		4752
1.09	MUNICIPAL BONDS		25000		27250		29703
1.12	CORPORATE BONDS		15000		16800		18816
1.12	COMMON STOCKS		50000		56000		62720
1.12	MUTUAL FUNDS		15000		16800		18816
1	ANNUITIES		0		0		0
1.15	BUSINESS INTEREST		250000		287500		330625
1.18	REAL ESTATE INVESTMENTS		25000		29500		34810
1	OTHER TAX-INCENTIVE INVSTS.		0		0		0
1.1	PENSION/RETIREMENT FUNDS		25000		27500		30250
1	TRUSTS		0		0		0
1	ACCOUNTS RECEIVABLE		0		0		0
1	OTHER		0		0		0
	TOTAL		409000	50.84	465710	52.02	530492
	PERSONAL ASSETS:						
1.1	RESIDENCE		200000		220000		242000
1.1	SEASONAL RESIDENCE		75000		82500		90750
1	AUTOMOBILES		20000		20000		20000
1	HOUSEHOLD FURNISHINGS		30000		30000		30000

are automatically made for periods of one, two, five, and ten years.

The planner can change the growth assumptions and immediately see the effect on that particular line item, as well as on the individual's total net worth. This type of analysis is invaluable in evaluating a client's current financial position and making recommendations for the future. Planners can assess the impact of specific changes and see if they're consistent with their clients' objectives and attitudes.

For years the computers in insurance companies' home offices have been used to provide insurance policy illustrations. Now, instead of having to rely on the mail or telecommunications capability to get policy illustrations, agents are able to use their personal computers to quickly and economically illustrate a wide variety of policy options. In fact, the insurance rate book is rapidly disappearing and, in its place, microcomputers are providing an improved result.

Universal life insurance, a highly interest rate sensitive product, could barely exist if the agent didn't have the ability to compute the many different policy choices available to the consumer.

Database Management

Because insurance and financial planning are people-oriented businesses, planners must maintain a considerable amount of confidential data on each client. The filing cabinet and manila folders of the past are rapidly being replaced by database management systems (DBMS), which enable financial professionals to create, store, edit, and access large amounts of client data.

Such a system can efficiently locate individuals or groups of clients who satisfy certain criteria. In 1983, for example, federal legislation imposed new and stringent vesting requirements on pension plans. Using the personal computer, a financial planner can quickly search for all those clients who would be affected by changes in the pension law.

Communications

Insurance agents and other financial planners are able to serve their clients more efficiently and effectively through improved communications. The American College/LIMRA study indicated that approximately 60 per-

cent of the companies responding have computer communications between home office and field, and an increasing number of the field terminals are personal computers.

Using the personal computer, agents can interrogate their home office computer to get such information as outstanding loans on existing policies, as well as to check on the underwriting status of applications in process.

In addition, planners are using their Apples to access commercial databases such as Dow Jones News/Retrieval® to get data important for financial planning.

It's estimated that there are now some 1600 databases available that provide an extremely broad range of information. This may include the closing price of an actively traded stock, a forecast of business spending during the coming year, or an estimate of the nation's gross national product. Such usage will become increasingly important in developing and updating financial plans.

In these and other areas, the personal computer has proven its value to a wide range of financial planners. No other innovation holds so much promise for meeting planners' needs and the needs of their clients.

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About the Authors:

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The Personal Banker and Relationship Banking at Peoples National Bank of Hayward

By Gregory Johnson

In today's banking world, the competition for new customers and the effort required to keep existing customers has never been greater. Even in our remote corner of northwestern Wisconsin this is becoming more and more evident. The demand for new banking products and sophisticated financial services is a challenge, not only for banks, but for their personal bankers as well.

The management and staff at Peoples National Bank of Hayward, Wisconsin, have been using Apple /// computers since early 1982 for asset/liability management, loan pricing, word processing, and other record-keeping functions. Thus, when the demand for new products and sophisticated financial planning services developed, it was natural to investigate whether we could use our Apple ///s to help our personal banker staff deliver these new products and services to our customers.

The bank's main computer system has an excellent on-line customer information file, but it could not list all our products and services, let alone give descriptions of them. Something had to be done to get this product information to our customers. The personal bankers could not keep up with new products being developed, nor with the demand for financial counseling from customers.

We considered using a database program to develop a product catalog, but the database programs available on the market would not do the financial calculations often needed to answer customers' questions. Combining a database program with a spreadsheet package to do the calculations would have worked, but the personal bankers didn't like the idea of using two different programs because switching between the two would be too time consuming.

It became clear that an "off-the-shelf" program would not be appropriate, so we began a search for a program written specifically for a bank's customer-information needs.

(continued on page 10)

Finding Relationship Banking

At a state banking seminar in early 1983, we attended a demonstration of the Relationship Banking system from Infoware. After only five minutes we decided that this system would solve our problem. The Relationship Banking program had all the features we were looking for, plus extra features we hadn't even thought about.

We purchased and installed the Relationship Banking program, and the benefits were immediate. Just setting the program up was a valuable learning experience for our staff. It was the first time we'd actually taken a good look at all of our products and services. By the time we finished building out the data for the program, everyone knew which products and services we could eliminate or reprice. In addition, everything we had to offer was located in one place for easy reference.

Setting Up Training

The next step was to introduce all of our personal bankers to the program. The Relationship Banking system has a built-in tutorial program that makes training very easy.

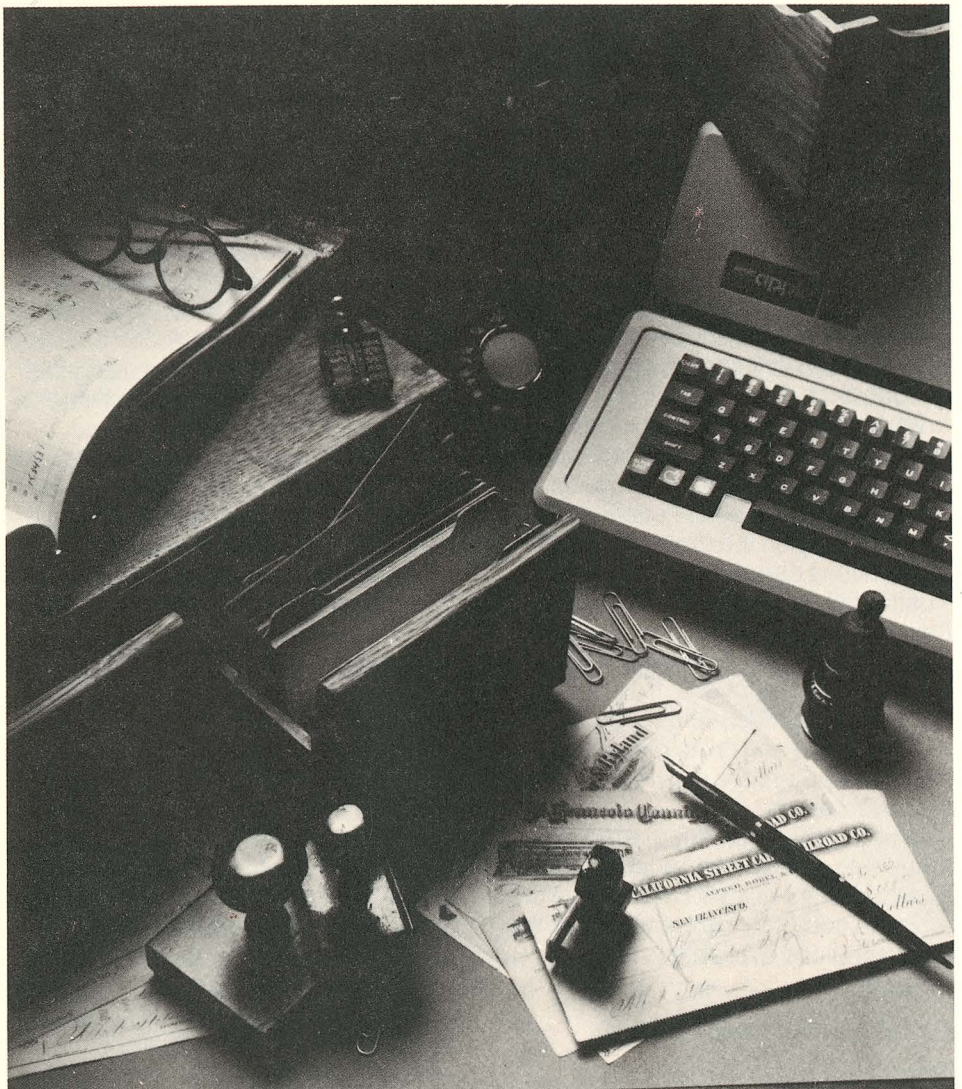
For each of our personal bankers, we set up individual sessions in which each personal banker went through the tutorial, and then played with our actual data until he or she felt comfortable enough to use it in front of a customer. The longest session took only 45 minutes.

Benefits

Our personal bankers now had a tool to work with that was very simple to use, yet powerful enough to contain all the information they needed. It was also capable of doing the calculations required to sell the bank's services to a customer. Cross-selling and financial counseling became much easier and more efficient.

Prior to this, cross-selling our products had always been a problem for our personal bankers because we had many variations of each product, and each variation was designed to meet particular segments of our market. But with Relationship Banking, our personal bankers now sit with the customers, discuss their needs, and demonstrate the products we have available.

In most cases the customers don't really know what they need, so the in-depth descriptions of products on the computer screen give them some idea of where to start. With the added



advice of our knowledgeable personal bankers, the customers can then make the decisions that are right for them.

Financial Calculations

The financial calculations part of the Relationship Banking system is what really sells products, especially our IRAs. A personal banker can actually show a customer how much an IRA will be worth in the future based on a certain interest rate and frequency of deposits. The print feature of the program allows the customer to take home a copy to study further or to save as reference material.

Even more impressive to the customer is the IRA annuity calculation that shows what monthly income could be after retirement. The program can even take into account the tax bracket of the customer at retirement.

Relationship Banking contains several other types of calculations that are helpful in selling products and giving customers financial advice tai-

lored specifically to their needs. An Installment Loan Alternatives function helps a customer decide how much he or she can afford to borrow. This is done by showing how different loan maturities and down payments can affect the size of the monthly payment.

The Tax Benefit of Borrowing function can be used to show just what the real interest rate is on a loan, based on an anticipated tax bracket. Other calculation functions include Withdrawing From a Deposit, CD Early Withdrawal Comparison, and Taxable vs. Non-taxable Accounts.

Additional Benefits

Relationship Banking gives us the benefit of having an internal training program that is never out of date. Our tellers can take 15 minutes out of a day and brush up on any new features of our products, or just refresh their memory on current products. The Print function has enabled us to produce an actual product reference manual for bank staff members who have no direct public contact, but

need to know about our products and services.

Relationship Banking from Infoware has given the Peoples National Bank of Hayward a competitive edge. Our personal bankers have a tool that makes them more productive and gives them a much more professional approach. Our customers, on the other hand, leave the bank with the products they need, and with the secure feeling that the products they received are right for them.



About the author:

Gregory Johnson is the Executive Vice President at the Peoples National Bank, located in Hayward, Wisconsin. He has been using microcomputers since 1981 and is responsible for starting the micro program at Peoples National Bank.



The Apple 32 SuperMicros

January 19, 1983: Apple Computer, Inc. introduces its newest computer, the Lisa.

January 24, 1984: Apple Computer, Inc. introduces its newest computer, Macintosh—as well as three new configurations of the Lisa, called Lisa 2, Lisa 2/5 and Lisa 2/10.

Confused? Let's take a few minutes to explore what these last statements mean by looking at what the Lisa 2 configurations are, and then at how the Macintosh personal computers fit with them in forming the Apple 32-bit microcomputer family, called the Apple 32 SuperMicros.™

The Lisa announcement in 1983 introduced Lisa Technology to personal computers and individuals. A combination of hardware and software capabilities, Lisa Technology is the foundation on which all the Apple 32

SuperMicros are built.

Specifically, the personal computers in this family contain 32-bit processing power, bit-mapped graphics displays, and the hand-held mouse pointing device that controls the pointer on the screen. Software allows cut-and-paste integration between applications and follows a "desktop metaphor," which includes clipboards, calculators, file folders, wastebaskets, and stationery pads.

With the introduction of Macintosh, however, the Lisa, as we knew it in 1983, has been modified and enhanced to provide the most compatible family solution to end users. Let's examine the new Lisa 2 computers more closely.

First, the hardware. The Lisa 2 is a 512K computer with one 3½-inch disk drive that uses the same disks as used on the Macintosh. The Lisa 2/5 is a 512K computer with one 3½-inch disk drive and a 5 megabyte external Profile hard disk. The Lisa 2/10 is also a 512K computer with a 3½-inch disk drive, but with a built-in 10 megabyte hard disk.

A customer can thus start with the Lisa 2 and add external or internal hard disks as well as an additional 512K of memory when it is needed. (One full megabyte of memory is needed to run the Lisa Office System integrated applications.)

In the area of software, the Lisa Office System operating system has been unbundled from the Lisa 2 computers to allow customers the choice of operating under another operating system, such as UNIX™ (and the hundreds of software packages that run in the UNIX environment). MacWorks, a software package for the Lisa 2 computers that allows them to run Macintosh software, will also be available early in March.

All seven integrated Lisa applications that run under the Lisa Office System are priced individually so that customers may buy LisaCalc, LisaGraph, LisaList, LisaProject, LisaTerminal, and LisaWrite separately. In addition, three development languages are available from Apple. They are BASIC-Plus, Pascal, and COBOL.

The software, all available on the 3½-inch disks, provide improved, faster versions of the Lisa software.

Customers who currently own the Lisa computer will be thrilled to know that they will be receiving, *free of charge*, an opportunity to upgrade

their Lisas to the new Lisa 2/5 level by replacing their current 5¼-inch floppy disk drives with one new 3½-inch disk drive and the new faster software on the new media.

All Authorized Personal Office Systems Dealers will be taking orders for this upgrade path immediately, and will be able to deliver this service to customers in early March. This is a marvelous opportunity for Lisa owners; it allows them to grow with the computer they've been using for months to a new realm of possibilities. With the purchase of MacWorks their new Lisa 2/5 and Lisa 2/10 will be able to run all Macintosh software!

An additional upgrade path will also be offered. For about the price of similar 10 megabyte built-in hard disk (\$2500-\$2800), Lisa owners may upgrade their current Lisa—with its 5 megabyte ProFile hard disk—to a Lisa 2/10. (The order may be placed immediately; availability will be about 8 to 10 weeks). These Lisa owners would have their Lisas upgraded to replace the 5¼-inch floppy disk drives with a built-in 10 megabyte hard disk drive and one 3½-inch floppy disk drive. New software is also included in this upgrade.

The result is that any Lisa owner can convert his or her computer into a Lisa 2/10 with a total of 15 megabytes of hard disk storage, a new 3½-inch disk drive, and the whole world of Lisa and Macintosh software development open to them.

And that's key! On January 24, 1984, the world was introduced to the newest members of the same family that Lisa had been pioneering during all of 1983: the Apple 32 SuperMicros. These 32-bit personal computers all utilize Lisa Technology, satisfying computing needs at all price points, from \$2,000 to \$7,000 and up.

We're very proud of the new Apple 32 SuperMicro family. And we're happy to introduce its newest members—Macintosh, Lisa 2, Lisa 2/5, and Lisa 2/10—to the world of Lisa-users and Lisa-watchers.

January, 1985: Where can we go from here?

UNIX is a trademark of Microsoft Corporation.



Technically Speaking

By Philip B. Erlanger

In my early career as a stockbroker, I became interested in computer applications that let me perform technical analysis on individual stocks. The driving force behind my interest was the need, commonly shared by brokers and investors, to improve investment performance.

Once I found a desirable program, I bought my first computer—an Apple II Plus. Little did I know what worlds would be opened to me from taking that first “byte.”

Methodologies

Technical analysis involves finding and following a trend statistically. Technicians look to the marketplace for their analytical tools. They record and evaluate price movements and trading volume. They rely on price and volume statistics to determine equity supply and demand (accumulation and distribution).

Technical analysis reflects the fundamental factors (economic, financial), as well as psychological and emotional factors of which the fundamentalist may have no knowledge. Technical methodologies usually involve complex number crunching that includes moving averages, moving averages of moving averages, cumulative tallies, relative strength indices, quantitative relationships, and ratios—most of which are designed to be plotted to illustrate comparisons.

It is no small coincidence, therefore, that computer technology lends itself so well to this type of analysis. Crunching numbers and depicting graphics can be done far faster and in much greater quantity by computer than by traditional means, resulting in a higher level of productivity.

Some Examples

Several years ago the technical analysis “rage” was On-Balance Volume™ (OBV). While many technicians computed OBV figures manually on a handful of stocks, a computer program emerged entitled On-Balance Volume Charting™ (Stock Market Software, Ashland, MA 01721). By accessing data from Dow Jones®, their program computes and plots on an Apple II the OBV for as many stocks as desired.

Indeed, most technical analysis software today will offer packages that create databases, manipulate the data according to a variety of formu-

las, and generate reports and graphics. The formulas often include a volume analysis, moving averages, relative strength, and other ratios.

A prospective buyer of such software should be very selective, however, as the databases these programs formulate must be purchased separately (running into thousands of dollars) and usually can't be integrated with other programs or be freely manipulated.

Another limitation of existing technical analysis software is that the analysis centers only on individual stocks, avoiding any effort to analyze the market as a whole.

But broad market judgments are key to a total technical picture. For instance, I wanted to perform analysis using my own personal indicators designed to depict the short-term direction of the stock market, overbought and oversold levels, and meaningful

trend reversals. In other words, I wanted a program that would continuously show the right side of the market to be on.

After months spent developing such a program, I completed the KING OF WALL STREET™, a program in two parts. The first of the two parts uses the broad market data that make up the Short-term Trading Index (that is, ups, downs, up volume, down volume) to depict market trend direction and overbought/oversold levels. The second part uses futures data from the Standard & Poor's 500 Price Index to track market sentiment by measuring the premium being paid for these contracts. I call this the I.F.I. (Index Futures Indicator). Both parts come complete with databases.

With these indicators I have observed that the market moves from advance phase to pullback phase, each lasting two weeks or so. Conclu-



sions of pullback phases are great times to look for strong stocks, while a maturing advance phase is a timely period for weeding out weak issues. The objective is to buy strong stocks on market lows and sell weakened stocks at market peaks.

About the Future

There is a developing trend toward integrated software—that is, one package that performs a variety of tasks. The trend should evolve to a point where the all-important database takes on the central role in integrated packages. The various functions orbiting around the data center might include word processing, spreadsheet operations, report generation, graphics, communications, and networking.

Integrated software is already here with the development of some pretty fancy spreadsheet packages. The same concept could be applied to technical analysis software, with particular emphasis on free and easy user data manipulation. This would legitimize the expenditure for data, going beyond the limitations of programmer-defined analysis, and would allow for methods of experimentation and formula fitting.

A Personal Note

In my years as a broker, the Apple computer not only aided in analysis, but also performed such tasks as word processing, portfolio review, mail list generation, and broker accounting. The development of the KING OF WALL STREET programs was successful enough to attract the attention of the research department of Advest Inc., for whom I now hold the position of Chief Technical Analyst.

Without detracting from my own abilities, I can say, as a matter of practicality, that my career would not have developed so rapidly and perhaps not quite so far had I not become involved with using an Apple computer. If you own an Apple, I urge you to utilize it as fully and creatively as possible. Owning an Apple could indeed bring you face to face with your own destiny!

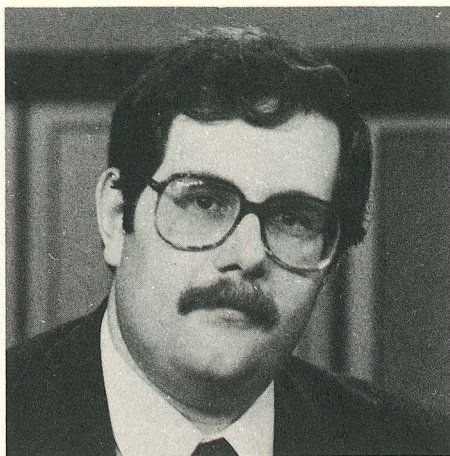
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Philip B. Erlanger is chief technical analyst for the securities firm of Advest Inc. in Hartford, Connecticut. Mr. Erlanger writes a weekly technical letter entitled *TECHNICALLY SPEAKING*, available on request (write to Mr. Erlanger at Advest Inc., Research Department, 6 Central Row, Hartford, CT, 06103).

A graduate of Boston University with a degree in economics, he has been a registered representative for Reynolds Securities, Merrill Lynch, and Mosely Hallgarten.



Apple's Commitment to its Growing Apple //—Apple /// Family

By Catherine Nunes

Amidst all the excitement surrounding the announcement of the Apple 32 SuperMicros, including Macintosh and Lisa 2 products, it's important not to lose sight of the staying power of the Apple //—Apple /// family and Apple's long-term commitment to the development of this product line.

For those of you who already own an Apple // or Apple /// system, you may be breathing a sigh of relief. For those of you who are still considering purchasing a personal computer, there are a number of good reasons why Apple //e and Apple /// products should remain on your shopping list.

The Apple // has always been a market leader. With an installed base exceeding one million, it continues to be the best selling personal computer on the market today. Why? Primarily because of its expandability, price/performance, and Apple's ability, through a market-driven approach, to guide its development.

Apple, along with third party developers, continues to upgrade as well as expand the features of Apple //—

Apple /// products. And the flexibility of this product family has always guaranteed a variety of options and growth paths for the first time user.

Developments and Directions

To confirm this commitment to the development of the Apple //—Apple /// family, Apple Computer has recently announced a number of options and features to ensure the continued success of this product line.

Apple Mouse

With advertising announcing "The Year of the Mouse," Apple introduced the AppleMouse for Apple // and Apple /// products. Using the same technology that produced the mouse for Apple's Lisa and Macintosh systems, Apple has produced the hand-held pointing device for Apple //s and ///s, allowing Apple // and Apple /// users to activate program commands easily.

Programs that utilize the mouse are easy to learn because they provide pull-down menus—all you need to do is "point and select." You can quickly locate all possible commands on the screen without disturbing the program you're working with. This avoids the need to reference the manual to see if the SAVE command is Control-S or Slash-S for the program you're working on. It also enables you to learn a variety of new applications without learning a whole new set of program commands.

ProDos and Profile

Apple created ProDos to give Apple //e users many of the operating system advantages that Apple /// users have: ProFile hard disk storage capability, high-speed information access, and a highly organized file structure. ProDos also offers total file compatibility with the Apple /// system, providing a tie between the entire family of products.

AppleWorks Integrated Software

AppleWorks is a new software package that offers Apple //e users three different applications in one program: spreadsheet analysis, word processing, and database management. This integration is another advance toward ease of use, because one set of commands is used for all three applications, and information from one application can be easily transferred to any other. /// E-Z Pieces™, an identical program for the Apple ///, is

(continued on page 14)

Apple's Commitment

(continued from page 13)

also available and is fully compatible with AppleWorks.

Third Party Developments

Apple is also working with a number of third party developers who are continuing to develop peripherals and programs to expand the choices in the Apple //—Apple /// family. One such development is the Rana box, (see "New Products," page 18). that cost effectively offers MS-DOS compatibility for the Apple //e. Being built by Rana Systems, the unit consists of two, half-height drives capable of storing 320K per drive with an Apple system; an 8086 microprocessor; and 256 kilobytes of main memory.

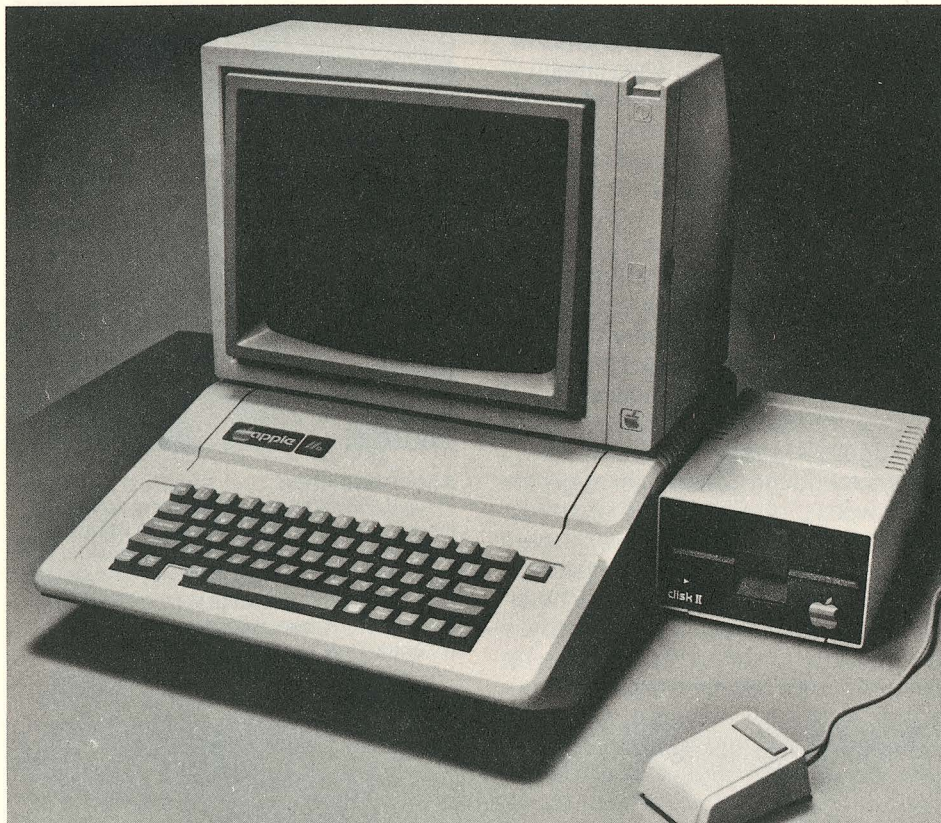
The Rana box offers high-density storage capability in either Apple // or IBM® format. It allows customers to run all of the most popular MS-DOS software, including Lotus 1-2-3™ and many others. For the Apple ///, five different companies are working on the same type of compatibility.

These are only a few of the products being designed to allow the Apple //—Apple /// family to keep pace as a leader in the personal computer race. New products and enhancements will continue to broaden the market acceptance of the Apple //—Apple /// product line.

Growth Path for Apple // Users

In the midst of such dynamic technology, the consumer often fears that the product he or she buys today will drastically change in the next few months or in the next year. Apple, however, is dedicated to offering a growth path for the users that buy today. For the most part, future enhancements and add-ons will be designed so that they can 'retrofit' back to all Apple // personal computers whenever possible, thus extending the life of the product. We have already seen this happen in the development of the mouse, and we'll continue to see this trend as the product family grows.

The Apple ///, with its Sophisticated Operating System (SOS), has been designed so that any device created to run on the Apple //e can easily be added to the Apple /// without any modification to the system. This shelters this product from obsolescence because it can quickly add and adapt to what the market wants in a personal computer.



Why Buy an Apple // or Apple ///?

The Apple // and Apple /// remain the computers of choice for those customers who like to go with a proven winner having the latest and most desirable software and peripherals. The number of ready-to-run software programs stands at more than 15,000 and is growing daily. The out-of-box reliability rate is better than 99 percent—a figure unmatched in the industry. And when it comes to price/performance, the Apple // and the Apple /// provide cost-effective solutions for a variety of applications.

But the most important feature consideration for the Apple //—Apple /// product line is its expandability. Most people don't know everything they will want to do with their computer at the time of purchase. After they begin to move up the learning curve, they start to ask "Can I do this?" or "Can I do that?" The Apple // and the Apple /// leave the opportunity for future growth wide open. So customers can extend the usefulness of their personal computers as their interests expand.

The evolution of the Apple // family reflects the kind of innovation that produces a stronger and more adaptive breed of computer—one that's flexible enough to meet the needs of the marketplace. Apple's ongoing development efforts on the Apple //—

Apple /// product family allow customers to be confident that they're buying a highly versatile, reliable, powerful personal computer, and that they will feel as good about their purchase in the future as they do today.

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Marketing and Selling Your Own Software

By Brad Crystal

Have you written a software program that you like so much you wonder how to go about marketing and selling it? Maybe it's an Apple /// program you've written for your business to help calculate production statistics more efficiently. Or maybe it's an Apple //e high-resolution color arcade game you wrote to provide hours of entertainment for your family.

Whatever the program, remember that it's your creative property, and your goal should be to maximize the income you can derive from it.

Keep in mind, though, that a program you find easy to use may seem esoteric to the uninitiated computer user. Thus, you'll want to pay particularly close attention to developing thorough documentation and an easy-to-understand manual. A program is only as useful as its instructions are clear.

As software reviewer Phillip Good puts it, "If you plan to sell your software, spend as much time on the manual as you did on the programming." A good way to evaluate the completeness and comprehensibility of your manual is to let one of your peers take it through a "test drive."

After you're satisfied that your program is well documented, your next step is to determine just how "original" it really is. Users groups, computer magazines, and software directories serve as excellent information resources. Software introduced to the market typically falls into one of three categories:

1. It's a brand new concept.
2. The concept is similar to currently available software, but with several enhancements.
3. It's an imitation of another program with slight changes.

Obviously, the first two categories have the best chance of high-volume sales. Keep your expectations in line with the realities of the marketplace.

After coming to grips with the originality factor, your first major decision is whether to (1) market and sell the program yourself, or (2) employ the resources of an established software publishing house.

The main advantage of the first plan is that you receive all net revenues. And why shouldn't you? After all, you're the person who wrote the program.

But there's a lot more to it than that. No matter how well written your program may be, it won't get sold all by itself. Turning a profit requires a great deal of additional work and monetary expenditure. Consider the nitty-gritty of advertising, packaging, promotion, and distribution details—they can add up to a full-time job. In fact, there may not even be any net revenues if your costs are higher than you anticipated.

Which brings us to the advantages of the second plan. By marketing your program through an established software company, you'll be able to concentrate your efforts in the area you're best at: programming. In recommending this course of action, one software company points out: "You can leave the manufacturing, packaging, documentation, distribution, and customer service to us."

If you decide to let an outside company market your product, you'll want to do some more research to determine which companies would most likely be interested. You can narrow down the field by seeking companies that specialize in the specific type of software you've written. Another consideration is company reputation.

Based on these factors, make a short list of your favorites. Then write a proposal to your "first-choice" company. If you don't receive a favorable response, contact each of the others on down the list.

You should sign a contract only when you're satisfied with the royalty arrangements and the marketing campaign the company will provide. Royalties generally range between 15 and 30 percent of the wholesale price of your program. Much depends on the prestige of the company and the perceived success of your software program.

For an in-depth listing of 500 of the most prominent software companies, pick up a copy of the *1984 Program-*

mer's Market. The entry for each company contains information on the following areas: types of computers (the hardware brands to which the company gears itself), software requirements, how to submit software, payment policies, examples of current software, contract work, and tips.

It's a handy reference that also contains forthright information about how to:

- Submit and sell your programs.
- Write user manuals that are readable and easy to use.
- Write program documentation that will help software publishers use your programs.
- Write programs that meet the needs of the program user.
- Write game programs that grab the player's interest and keep the player coming back for more.

For more information, contact:

1984 Programmer's Market
Brad McGehee, Editor
Writer's Digest Books
9933 Alliance Rd.
Cincinnati, Ohio 45242

You may also want to check out *The Directory of Software Publishers—How and Where to Sell Your Program*, which contains listings of well over 200 software companies, plus articles on such subjects as:

- "Writing Microcomputer Software for Resale"
- "Your Manual is the First Thing They See"
- "Software Legal Protection"
- "Do You Want to Write A Computer Game?"
- "On Selling Software Directly to Users"

For information on the directory, contact:

The Directory of Software Publishers
Eric Balkan, Editor
Van Nostrand Reinhold Company Inc.
135 West 50th Street
New York, N.Y. 10020

There are also numerous articles that may be of interest to you, such as "You Think You Have a Million Dollar Program," from the May, 1983, issue of *Call A.P.P.L.E.* You might also be interested in the article, "Selling Your Software," from the January, 1983, issue of *80 Micro*.

These are just some of the resources available to help you find the right path for marketing your software.

By Suzanne Weisenberger

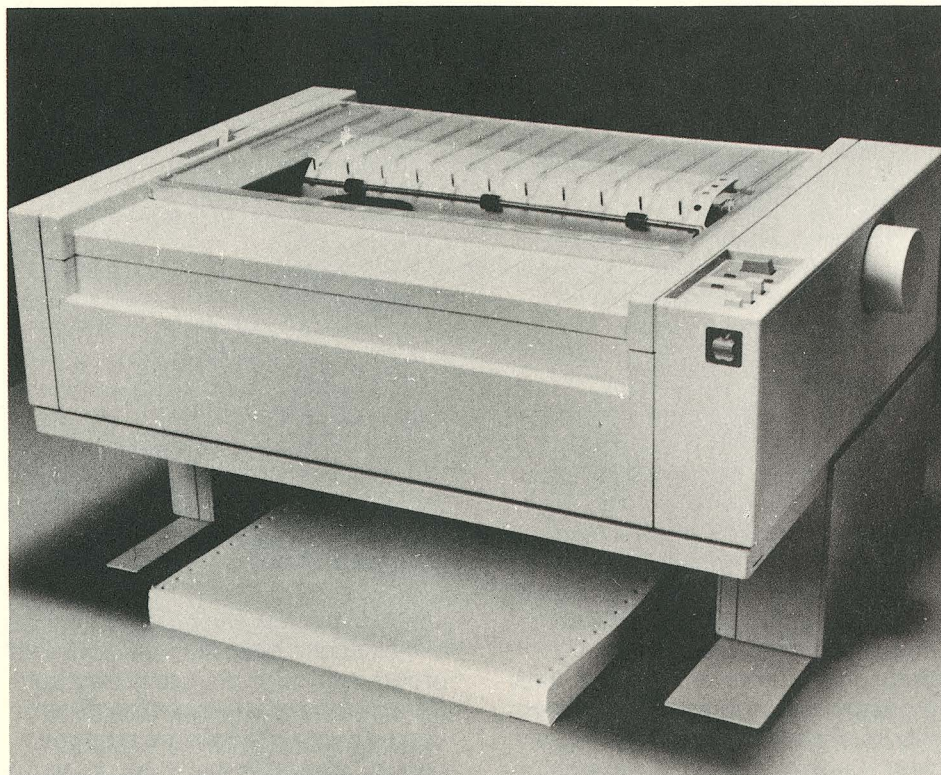
■ *The Apple Imagewriter*, a dot matrix printer designed by Apple software experts, is 60 percent faster than other comparable dot matrix printers. It boasts a print speed of 180 characters per second in graphics mode and 120 cps in text mode. Printing is accomplished by a 9-wire printhead producing near-letter-quality text, and graphics with densities from 72 to 160 dots per inch. Its custom-designed case controls audible noise so that printing is very quiet. The Imagewriter offers expanded user features, including:

- eight user-selectable font sizes and up to 175 user-programmable characters
- multiple character sizes (9, 10, 12, 13.4, 15, and 17 characters per inch)
- proportional printing
- eight user-selectable graphic dot densities
- subscripts and superscripts.

For more information on the Imagewriter Dot Matrix Printer, contact your local authorized Apple dealer.

■ Using *Portfolio Valuation System (PVS)* from Computer Aided Decisions, Inc., you can now do your own custom portfolio appraisals. Providing appraisals as complete and versatile as the most sophisticated timesharing programs at a mere \$3 a run, PVS gives you total privacy and instant access. It permits you to automatically price securities held with current or "as of" prices; add, change, or delete portfolios; print eight different portfolio appraisals; and cross-sort for holdings among all portfolios at any time. For more information, contact Computer Aided Decisions, Inc. at (617) 542-6181.

■ *AppleWorks*, the new integrated package for the Apple II, combines word processing, database management, and financial modeling—the productivity tools used most often by personal computer owners—into a single program. With a few keystrokes, AppleWorks allows you to move freely among files in any of the three applications, eliminating time-consuming swapping of disks. This package allows you to keep up to 12 files in memory at once, and using the "cut" and



"paste" feature of AppleWorks, users can easily move information from one file or application to another. For more details, contact your local authorized Apple dealer.

■ With the *Diplomat*, you can change your Apple II to any foreign character set and back again at the flip of a switch. The Diplomat is available in Spanish, German, Italian, English (UK), French, Hebrew, and Dvorak. Custom-designed kits to accommodate special characters or keyboard layouts are also available. For more information, contact International Solutions at (408) 354-2988.

■ *Macro-Trend* is a commodity trading system for the Apple II. The program generates entry points, exit points, reversals, and protective stops. After the Market close, daily trading data can be retrieved via telephone transmission from a computer data bank in Boca Raton, Florida. For more details, contact Macro-Trend at (301) 365-3737.

■ *The Serial Card III* was designed for professionals and businesses needing two or more serial ports on their Apple III. The Serial Card III offers a second communications port to the

Apple, so you can attach two serial devices simultaneously without having to swap cables. The card features a built-in modem-eliminator switch, and will transmit data at speeds from 50 to 9600 baud. For more information, contact your local authorized Apple dealer.

■ *MuniFinance Systems* has designed a program to help investment bankers, financial advisors, and chief financial officers structure debt service and analyze different funding alternatives for municipal and corporate capital projects on the Apple II. The system comprises four programs sold separately, and offers a link to Micro DSS/Finance, a sophisticated financial modeling language. For more information, contact B.A. Nicholson & Co., Inc. at (212) 889-7535.

■ *The IFDS™ Financial Planning System* for the II and III was designed for the financial planner to create complete financial and tax plans. These include introductory pages, demographic pages, current financial position, income tax planning, retirement planning, education planning, investment planning, cash management, risk management, post mortem plan-

ning, and a chronological implementation guide. For more information, contact IFDS (International Financial Data Systems) at (404) 256-6447.

■ **The COMPASS System**, from Morley & Associates is a highly interactive software package designed for professional investment managers. COMPASS allows the manager to quickly evaluate the potential risk and return characteristics of an infinite range of investment portfolios. Given minimum return criteria, the system can utilize its sophisticated econometric model to develop a predetermined number of ranked optimal portfolios that maximize yield while conforming to maximum risk boundaries.

This program will assist the investment manager in determining compatibility of investment strategy with client risk and return targets. It will also refine asset utilization to boost performance while containing risk, and will help expand marketing opportunities. For more information, contact Morley & Associates at (800) 548-4806.

■ **The Scheduler** is a complete calendar/docket scheduling program for professionals such as attorneys, accountants, architects, engineers, and physicians. This program records client appointments and tasks, and automatically accommodates multiple occurrence dates to prevent duplicate scheduling of time. In addition, the program generates control schedules upon numerous selection criteria, and produces a calendar for each professional in the firm. For more details, contact Starsoft at (415) 965-8000.

■ **MoneyNet™** from Money Tree Software is a new telecommunications support system for financial planners. It allows you to do all types of product research, such as checking the current interest rates on annuities or universal life policies, as well as accessing selling ideas and announcements, investment news, and program updates. Using MoneyNet's electronic mail capabilities, users can send and receive messages by computer. For more information, contact Money Tree Software at (503) 757-1114.

■ **E. T.**, from Financial Planning Software, Inc., lets you calculate on your Apple /// the federal and state estate pick-up tax for your client and his or her spouse. Given all the

alternatives under ERTA, it also allows you to determine the best estate plan for them. The program is designed for bankers, attorneys, CPAs, insurance agents, and financial planners to help develop better client relations.

E. T. allows you to compare alternate methods of distribution, accurately calculate taxes in each estate, show the distribution between marital and nonmarital shares, and show the liquidity needed in each estate, as well as the impact of inflation. For more information, contact Financial Planning Software, Inc. at (309) 673-1407.

■ **Origin's™ Shareholder Accounting System** provides control over the authorized, issued, and outstanding shares of both common and preferred classes of stock. Reports generated from this system provide the permanent records to verify changes in equity accounts. This package automatically handles cash and stock dividends, dividend reinvestments, and stock splits. Complete audit trails are produced by these separate activities, ensuring needed control over each critical function area. For more details, contact Origin at (203) 655-6832.

■ **The Multi-Tool™ Expert System** was designed to help you build financial or accounting worksheets using the Multiplan™ electronic spreadsheet. The Multi-Tool Financial Statement generates an income statement and a balance sheet, and computes 18 of the most important and commonly used financial ratios. Multi-Tool Budget, for budget planning and control, uses a variable costing method and produces six planning worksheets, including the manufacturing overhead budget, unit cost budget, sales budget, cost of goods sold budget, selling and administrative expense budget, and operating budget. For more information, contact Microsoft at (206) 828-8080.

■ **First Contact**, from the Bank Administration Institute, is a comprehensive program for the Apple II and III. Designed for bank training needs, the program increases trainer productivity through computer-aided instruction.


The 25 First Contact disks give a full overview of the fundamentals of banking, including the history of the American banking system, kinds of services offered by banks, the role of the teller, electronic banking, and the future of

banking. A second section addresses the cross-selling of banking services, covering problems such as how to identify customers and how to handle various selling situations, as well as good customer principles.

Quizzes at the end of each chapter monitor the training process and detect weak areas. For more details, contact the Bank Administration Institute at (312) 228-6200.

■ **PENPRO™** from Benefit Analysis, Inc. turns your Apple into a pension and profit-sharing plan specialist. PENPRO knows the intricacies of the law, and can apply the extremely complex regulations of the Internal Revenue Service to the design of tax-qualified pension plans. This program calculates up to 15 different types of tax-qualified pension and profit-sharing plans, shows the costs of the plans, and produces a comparison of 6 different plans in an easy-to-read, "bottom-line" format.

PENPRO will handle a variety of plan types, including defined benefit (with and without social security integration), integrated and non-integrated profit sharing and money purchase pension, IRA comparisons, and Simplified Employee Pension Plans (with and without social security offset).

Qualified pension and profit sharing plans can also be compared, with or without life insurance split-funding (including whole life, term, universal life, and variable life). For more information, contact Benefit Analysis, Inc. at (215) 527-7400. 

new products

MS-DOS for the Apple // and ///

By Tom Virden

The recently announced Rana 8086/2 will give the Apple // and /// personal computers a gateway into the MS-DOS™ world. The Rana box is a dual-disk-drive coprocessor that plugs into the back of an Apple // or /// and will read either Apple or MS-DOS-based disks. The product has an Intel 8086 processor and 256 kilobytes of main memory (expandable to 512 kilobytes). A math chip can also be inserted to speed up the processing of large number-crunching tasks. The two disk drives are "half height" and double sided.

The Rana box will make it possible to run most of the popular MS-DOS software programs, just as CP/M® cards have allowed Apple users to run CP/M-based applications. The box can work as two different systems. Loading an Apple disk tells the Apple processor that two high-density disk drives are available. Loading an MS-DOS disk, however, invokes the 8086 processor and actually runs the program in the Rana box, using the Apple for all the necessary keyboard and peripheral support.

Apple has arranged for software developers to convert programs to run on the new Rana system, including the recently announced Microsoft® Windows, which will add a new windowing environment to the Apple. (Windows allow the user to run more than one program at a time and to transfer data between them, such as putting a budget into a word processor.)

Several new features have been added to the Rana system, such as two pages of video memory, which dramatically improves the graphics display rate.

For more information on the Rana 8086/2, contact Rana Systems, Chatsworth, CA. at (213) 709-5484.

MS-DOS is a trademark of Microsoft Corporation.

CP/M is a registered trademark of Digital Research, Inc.

Reach Out and Touch Someone—Electronically

By Ferhan Cook

Modems open up exciting horizons for personal computer users. Advanced communication services and recent developments in the information-networking arena allow access to various commercial information services, and make such sophisticated applications as electronic mail, electronic shopping, and electronic banking possible for even the novice computer user.

Via modems, you can hook onto local information networks, send electronic bulletins to members of a club or group, and attend a multi-city conference without ever leaving home. All of it possible through the use of personal computers and the modems that link the personal computers together.

As a busy executive, you can attend a club meeting or connect to several local bulletin boards without moving from your desk—whether at home or at the office. Remote databases can provide you with stock quotations, news, and other important business intelligence in seconds.

Through simple telephone communications, a personal computer can become an electronic mail link keeping one office in touch with other offices in remote locations. Managers can access or send business data over great distances and actually conduct business without travelling to remote locations. Several companies are introducing advanced communications software that lets users accomplish these advanced functions.

What are modems? Actually, "modem" is an acronym for the term "modulator-demodulator," a device that converts a computer's electrical signals into audible sounds (modulation) for transmission over the telephone, and back again (demodulation) for reception by another computer.

Stated another way, the modem transforms the digital data signals sent by the computer into analog signals that can be transmitted through telephone lines. At the other end, another modem receives this analog data and converts it into digital signals



again so that the receiving computer can understand it. In short, a modem transforms the microcomputer from a single, stand-alone machine into a much more effective tool by adding communications capability.

Apple has recently introduced two modems. The Apple Modem 1200 transfers data at 120 characters per second, a very fast rate and an economical one when sending high volumes of data over long distances. Most 1200-baud modems are used by professionals since, over the long term, they are more economical than the 300-baud modems.

The Apple Modem 300 transfers data at a slower rate, but its up-front cost is lower than the Apple 1200 Modem. This makes it ideal for people who would like to connect to information services or communicate through local information bulletins.

Apple modems can be hooked up to all of the Apple families of computers—Lisa, Macintosh, Apple ///, and Apple //e. In the near future, the Apple modems will be compatible with other personal computers as well.

Currently, the Apple modems come with promotional membership offers from services like The SourceSM and CompuServe[®]. Bank of America is introducing its home-banking program in California, and running demonstrations with Apples. Several other banks, such as CitiBank and Chemical Bank in New York, are implementing home-banking programs.

In short, the possibilities are limitless. A new era—the computer communications era—is opening up: the ability to reach out and touch someone electronically is no longer a dream.

The Source is a service mark of Source Tele-Computing Corp., a subsidiary of The Readers Digest Association, Inc.

CompuServe is a registered trademark of CompuServe Corp.



SeaCas

(continued from page 1)

SeaCas, on the other hand, is designed to work independently of the automated accounting functions a client may have. (The SeaCas software does, however, incorporate the ability to download files for processing on the Macintosh.)

SeaCas also allows our auditors to bring the power of the computer to the audit in those instances where our clients do not have automated accounting records. Using SeaCas, the auditor can perform a variety of audit functions, including:

- Preparing the working trial balance; posting, adjusting, and reclassifying journal entries; and preparing the draft financial statements.
- Documenting the client's system of internal accounting control.
- Preparing an audit plan that is both efficient and effective.
- Preparing detailed audit working papers.
- Preparing and controlling audit confirmation letters and various audit correspondence.
- Determining a statistically valid audit sample, including a statistical analysis of the sample results.
- Researching audit and accounting questions by accessing Firm and public databases of authoritative literature.
- Analyzing client operating statistics for unusual trends, through comparison with historical data and industry standards.
- Communicating between offices and between engagements, and transmitting information from a central location to many offices throughout the world.
- Scheduling audit staff to optimize utilization and avoid scheduling conflicts.

SeaCas and Apple Computers

SeaCas was originally implemented on the Apple ///, our targeted interim machine. We knew in 1981, when SeaCas was designed, that we wanted SeaCas to operate on the most advanced microcomputer technology available. We chose Apple because of its technological leadership, and because of its willingness to share its latest technology (the Macintosh) with us sufficiently in advance of general availability so our enhanced software would be ready when the Macintosh was ready.

The Macintosh and our software will be ready for Firm-wide use this spring. The Macintosh will allow us to improve the *capacity* of our system, as well as its *processing speed*. Most important, however, the user interface of the Macintosh will allow us to make the SeaCas system truly "auditor friendly."

A primary goal of SeaCas is to make the system as auditor friendly as possible; we have no desire to turn our auditors into data-entry clerks. That's why we felt that the software must incorporate terminology familiar to the auditor. We also felt that the microcomputer should perform functions for the auditors in much the same way as the auditors performed those functions manually in the past. This focuses the impact of the switch to microcomputers on the *mechanics* of the system, that is, on how the microcomputer does work *already familiar* to the auditor.

Typical Audit Functions

The current version of our proprietary Financial Statement Subsystem software, which generates the working trial balance (including adjusting and reclassifying journal entries and drafting financial statements) requires auditor or client personnel to first establish two data files—(1) a general ledger chart of accounts, and (2) a financial statement format.

Once these two files are established, the auditor matches them up. This was formerly accomplished by displaying a portion of the financial statements and then typing the supporting general ledger account numbers. Now, with Macintosh and the aid of the mouse (a small device that fits in the palm of your hand and controls the pointer on the display screen), the auditor points to a line on the financial statements and then points to the supporting general ledger accounts. This greatly improves auditor efficiency by reducing required keystrokes.

Our approach to documenting internal accounting controls—SEADOC (Systems Evaluation Approach, Documentation of Controls)—requires our auditors to prepare a series of streamlined flowcharts. Once again, using mouse technology, coupled with the high-resolution graphics available on the Macintosh, our auditors will be able to complete these documents and, with minimal effort, edit them in the future to reflect changes in the client's accounting system.

(continued on page 20)



SeaCas

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As with the Apple III version of SeaCas, the Macintosh version relies on commercially available software to perform certain tasks. We use Multiplan, for example to prepare detailed audit working papers. We can pass information from one commercial software package to another and to our software by creating DIF™, SYLK, and ASCII files. For example, the financial statement balances created by the Financial Statement Subsystem can be passed to Multiplan for further analysis using various "What If?" scenarios, or to a graphics package for graphic illustrations of financial trends.

Impact of SeaCas

Probably the greatest impact of SeaCas on the way we currently conduct our audits will be in the proliferation of microcomputers in our audit practice.

When we released the Apple III version of SeaCas, we asked our auditors to take a measured approach. Prior to 1982, microcomputers had been used, but there had been minimal centralized, direct effort.

The SeaCas group provided the directed effort we needed. This group designed and developed our proprietary software and a variety of commercial software templates. As a result, our auditors now have a host of user friendly, efficient microcomputer tools from which to choose. 284-50M

Using SeaCas with Apple IIIs

Initially, we asked all of our U.S. operating offices to purchase at least one Apple III (most offices purchased more). We also asked them to designate one individual in the office to be trained to assume the responsibilities of "SeaCas Coordinator." This individual subsequently conducted local office orientation sessions designed to acquaint our auditors with the capabilities of SeaCas.

We did not dictate to our operating offices a minimum number of engagements where SeaCas should be used. Instead, we let the system sell itself, and we have been very gratified with the initial results. We had hoped each office might use SeaCas on 6 to 8 engagements during the first year. But when our auditors found that SeaCas could improve audit efficiency by automating the clerical tasks associated with an audit, use of the system increased dramatically. In fact, we averaged more than 20 engagements per office.

Overall system use exceeded our original expectations because of two

distinct developments. First, we were invited to train SeaCas coordinators in our Canadian and continental European practices. Thus, SeaCas became an international product, capable of dealing in foreign currencies and operating on Apple IIIs configured with German, French, and even Greek keyboards. Second, we released an enhanced version of our software and several commercial software templates, including a VisiCalc consolidation template that uses the output from the proprietary software.

Using SeaCas with Macintosh

We are now about to begin the third and most significant stage. Over the next few months we'll be distributing over 2000 Macintoshes—one for each of our in-charge accountants, plus a number of machines for our management group and partners. Virtually every one of our audit engagements around the world will use SeaCas. SeaCas has come a long way since its introduction in late 1982. The conversion of SeaCas to the Macintosh is another milestone in our overall development plan. We still have more proprietary software on the drawing board, however, and plan more enhancements to our existing software. SeaCas will continue to have a profound effect on the way our professionals conduct an audit. In fact, we believe the day will come—in the not too distant future—when our auditors will be issued a microcomputer the day they join the firm.

DIF is a trademark of Software Arts Products Corporation.

About the Authors:

Richard D. Webb is an audit partner and senior computer audit specialist in the executive office of Peat Marwick, where he is responsible for development and implementation of SeaCas.

Michael E. MacDonald is a senior manager in the executive office of Peat Marwick. He has had audit management responsibilities on a variety of clients including financial institutions, commercial enterprises and not-for-profit organizations. Now working with other auditors and data processing professionals, Mike has significant responsibilities in the design, development, and implementation of SeaCas.



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